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SUMMARY OF REPLIES TO SELECTED MIS INQUIRIES

What questions have been raised by MIS cities that are of general interest to all subscribers?

Management Information Service is now in its 15th year. Besides preparing monthly reports on timely subjects, MIS answers 100 inquiries a month from its 1,123 subscribing cities, towns, and counties. Answers point out trends, recommend examples of good practice, suggest possible courses of action, indicate references, and often include the loan of books, reports, and other materials from the MIS library. The purpose of this report is twofold: (1) to summarize replies to some recent inquiries which are of general interest, and (2) to highlight the salient points of answers to inquiries not adaptable to full-scale MIS reports. The summarized subjects are:

- Control of Hillside Subdivisions
- Establishing a Zoo for Medium-Sized and Small Cities
- Police Station Planning
- Regulation of Gravel Pits
- Tree Regulations in Subdivision Ordinances
- Eliminating the Bird Nuisance
- Regulation for Heliports

Control of Hillside Subdivisions

Question: This city is faced with the increasing residential development of hillside areas. What special standards, if any, should be required?

A problem that is beginning to receive attention by planners is what special regulations, if any, are needed for the development of hillside areas. Large-scale subdivisions in many areas have exhausted the supply of flat or rolling land; thus hillside land is now being used for subdivisions, some of which is unsuitable for home construction.

It has long been recognized that hillside areas have certain advantages — trees, interestingly shaped lots, and view. Construction in the past has largely been limited to the custom-built home. Now that homes are being constructed in groups, certain problems are highlighted: grading and drainage, lot size, street design, and utilities. Since hillside development is costly, developers often urge special exceptions to land-use standards to keep costs down.

Regulations controlling development may be found in separate ordinances, subdivision regulations, and zoning ordinances. Definitions of what constitutes a hillside may vary as to detail, but all appear to agree with the statement of definition in the Oakland, California, ordinance controlling hillside subdivisions: "For the purposes of the article, the term hillside lands shall be construed to mean land proposed to be subdivided which has an average difference in elevation of more than 15 feet in a horizontal distance of 100 feet."

Excavations. The first problem, and one of the most important, is developing hillside areas in a safe manner. A report to the city manager from the planning director of Richmond, California, said, "Any time a thousand or more cubic yards of earth are shipped from one location to another, creating new hills and altering traditional drainage courses there is an inherent danger that streets, yards, or house sites may collapse." To guard against erosion, poor drainage, and landslides some

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The Oakland, California, ordinance on hillside subdivisions illustrates a second method of controlling lot sizes. All lots must be at least 8,000 square feet with an average frontage of 80 feet. Lot sizes are smaller where the topography limits construction to one side of the street; a minimum of 6,000 square feet with an average frontage of 60 feet.

A third approach is suggested by LeRoy L. Little (assistant director, Allegheny County (Pennsylvania) Planning Department). He proposes controlling lot area by requiring a minimum back yard for both the uphill and downhill sides of a slope. He stresses the planning of lots so that people do not look upon each other, but gain the advantage of hillside views. Subdivisions in areas with slopes greater than 20 per cent should be reviewed individually.²

The major problem in establishing standards for lot size is irregular topography. In certain areas the land may be so rough that building sites should be restricted to one for every two or three acres; on the other hand close by could be a flat ridge which could allow normal-size lots. Provisions for adjustment of lot size, based on topography, soil conditions, and density of population, are desirable. Each development presents its own problems, making rigid requirements difficult to administer.

Street Standards. Hillside developments raise questions about street design as to width, grade, curves, and the need for curbs. The basic problem is the residential street, not the collector or arterial street. The latter two of course must be considered. However, because of traffic volume there is less room for adjustments. The San Mateo, California, City Planning Commission published a report covering all aspects of street design for hillside development. The report is available on loan to MIS subscribers.³ To avoid complexity, this discussion is limited to residential streets.

Street standards should recognize that the construction costs rise as the slope increases. Just as important, the normal full width of streets might destroy the aesthetics of the area. Arbitrary widths, grades, and curves may necessitate destruction of trees and other natural features. A 30-foot pavement may require as much as 80 feet to allow for embankments, culverts, and other special construction features for safety. There are a number of considerations in developing standards. Some of the more important are:

1. The volume of traffic is the major consideration in determining street widths. Traffic volume has a direct relationship to population density. Thus as density decreases, street widths can be reduced.

2. The steepness of the grade has an influence on not only cost but also on construction method and design. As the cross slope increases lot size should increase. This reduces density, allowing for narrower streets.

3. The need for parking is extremely important and influences the width of streets. An eight-foot lane is needed for parking in addition to a minimum of 10 feet per moving lane for moderate speeds. If street widths are narrowed, two steps can be taken to provide parking area.

First, the initial plan of the development should estimate the need for parking. Deed restrictions should be drawn that will require a certain number of on-lot parking spaces. In large-lot subdivisions this provision may be adequate, making possible no parking on the street. However, in smaller-lot developments this is not enough.

A second possibility is to provide parking bays, constructed by simply widening the street in certain areas.

4. In designing the width of streets, consideration should be given to allowing for the easy movement of emergency vehicles, particularly fire trucks. Streets that are narrow and provide only one unobstructed moving lane can be a serious hazard.

²LeRoy L. Little, "The Shape of Land-Controlling Cuts, Fills, Benches, and Site Grades," *Proceedings Local Government Conference and Subdivision Control* (Pittsburgh: Institute of Local Government, University of Pittsburgh, May, 1957), p. 49.

³San Mateo City Planning Commission, *Subdivision Standards for Hillside Areas* (San Mateo: The Commission), undated, 24pp.

5. In designing hillside streets serious consideration should be given to requiring curbs. One of the major functions of a curb is to carry off surface water. The need for curbs is greater for hillside developments than for standard developments.⁴

Utilities. The final problem arises as to standards for utilities, particularly sewer and water. Requirements in this area cannot be altered greatly, obviously because of health standards.

The only alternative to a public water supply and public sewers, are private wells and disposal systems. The use of private facilities is possible depending on several factors. Where public facilities are not required, lot sizes should be sufficiently large enough to provide for septic tank leaching beds, and to avoid contamination of the water supply. Further, soil tests to indicate the soil absorption rate are necessary. Certain areas with clay deposits or large rock formation are not suitable for private systems. In such areas public facilities should be provided or the land not developed until such facilities can be provided.

Establishing a Zoo for Medium-Sized and Small Cities

Question: Do you have any information on establishing a zoo for cities under 50,000 people? We are interested if other cities under 50,000 have zoos; what factors should be considered as to whether or not a city should establish such an operation; and what steps should be taken in establishing a zoo.

Yes, other cities under 50,000 people do have zoos. Zoos are located in Hermosa, South Dakota; Moose Jaw, Saskatchewan; Monot, North Dakota; Manhattan, Kansas; and Stanford, Florida. Stanford's zoo started with pet raccoons, two alligators, and a few monkeys which were kept by the police department as pets. The city decided to assume the care of the pets as a starter for a municipal zoo. Additional animals were added when a small carnival became stranded in Stanford. Stanford's zoo today displays lions, pumas, bobcats, bears, and several kinds of birds.

Strong public support is essential before a city should consider establishing a zoo. The function is a cultural, educational, and recreational asset, but it requires tax support. Without support and active interest a zoo will not succeed. Groups most often interested are zoological societies and educational, recreational, and wildlife organizations. If such interest is present, the operation can be highly successful. Hermosa, South Dakota, reports attendance of 400,000 people annually; Moose Jaw of 70,000, and Manhattan, Kansas, of 50,000.

Finances naturally will influence a community's decision as to whether or not to start a zoo. The superintendent of the Stanford zoo, in an article entitled "Why Not a Zoo for Your Town?" *Tennessee Town and City*, June, 1959), was quoted as saying: "Any city of 10,000 or more can have a very nice small zoo for an initial cost of about \$20,000." Investment in buildings for the smaller zoos ranges from \$5,000 up; for animals from \$2,000 to \$40,000. Operating costs also vary greatly, sometimes as low as \$5,000 per year.

Zoos generally are financed from city taxes. Other sources of revenue are (1) a special tax voted by the people, (2) revenue bonds, (3) gifts and bequest, (4) membership dues, and (5) operating revenue from admissions, concessions, and parking. Some zoos are able to meet all operating expenses.

Getting Started. What steps should be taken to start a zoo if a city has public support and feels that it can afford the service? Usually it is wise to start small and plan for growth over the years. Responsibility for the operation of a zoo should be assigned to the recreation or park director. At first a full-time director may not be necessary. A citizens advisory committee can be extremely helpful in gaining active support, particularly for donations.

Location of a good site is the next step. Actual size of zoos varies from 2 acres to over 200 acres. The American Association of Zoological Parks and Aquariums recommends a minimum of

⁴For information on curb design for hillsides see George C. Bestor, *Design and Development of Hillside, Large Lot and Resort Subdivisions* (New York: Urban Land Institute, March, 1958), 8pp., and the San Mateo Planning Commission report referred to in footnote 3 above.

75 acres, but the size of the site is influenced by the type of animal collection and funds available. In general six factors influence site location.

1. The zoo should be easily accessible by automobile and by the local bus system.
2. Area should be available for off-street parking.
3. Varied terrain adds to the attractiveness of a site, but might be costly to develop. Good drainage is important. Parks often provide an ideal location.
4. The zoo should be away from built-up areas. A buffer zone around the park protects surrounding property from noise and objectionable sights and provides exclusion for exhibits.
5. If possible locating near utilities is an asset. Sewage and water supply are extremely important.
6. Initially a new zoo will be small, but room for expansion should be provided.

The physical facilities depend largely upon the type of animals, and expert advice should be sought.

Acquiring animals, if approached right, is not as difficult as it might seem. Do not start by shopping for an elephant or lion which could easily require the total budget allocated for animals. Big zoos are establishing sections especially for children. Start the collection based on the idea of "small animals for small people." Imagine the interest that being able to milk a cow, watch chicks hatch, pet a pig, or lead a goat on a leash would create. A farmland collection might be located in an existing park. Such animals are relatively easy to care for which is important for operating costs. Some cities have displayed their animals in farm or nursery-rhyme settings.

From this beginning, the collection can be expanded. Specimens of regional wildlife, such as foxes, squirrels, and ground hogs, will add additional interest. Birds and snakes are of interest and have educational value.

A community may not get beyond the farmland stage or may keep expanding until lions, tigers, and other large animals can be displayed. In either case a community has one more asset. The Agriculture Experimental Station, Michigan State University, in cooperation with the American Institute of Park Executives and the American Association of Zoological Parks and Aquariums has published *A Zoological Park*. This booklet has pictures and diagrams of interest to any city contemplating a zoo.

Police Station Planning

Question: What steps should be taken and what factors should be considered in the location, layout, and design of a police station?

Requirements for a police station vary, depending on the size of the community. In many communities the police station will be part of the city hall; in others it will be a separate building. Some communities, particularly the larger ones, are decentralizing operations from city hall, locating them in an area where the operation can be more effective. Whether or not the police station is part of city hall it should originally be planned as if it is a separate structure.

Steps in Planning. The first step is to review present facilities and to list all inadequacies. This shows what is needed in a new station. This review should be conducted by the police department. All too frequently, the people most concerned are not made an integral part of the planning process.

The second step, closely related to the first, is to measure present work load and activities of the department and to estimate long-term requirements. Expected population growth, areas of expansion, and the crime problem must all be noted. The facts gathered will influence site location and the actual facilities of the new building. The information can be gained from the planning agency, census data, and departmental records. State agencies, particularly the state police or highway patrol, may provide information about the area that has been gathered for state planning.

The third step is to develop an over-all concept of the facilities needed. This is important before taking the fourth and fifth steps of hiring an architect and picking a site. It is wise to have a clear conception of what is wanted before attempting to hire an architect. The architect will make valuable suggestions but must have a guide to prevent loss of time by submitting a number of unacceptable designs. When possible, it is desirable to employ the architect before site selection, particularly if alternate sites are available. He can be helpful in analyzing the assets and liabilities of each site as to construction problems and costs in relationship to needs. (For methods of selecting an architect see MIS Report No. 102, *City Hall Location and Layout of Office Space*, July, 1952 and MIS Report No. 88, *When and How to Use Outside Consultants*, May, 1951).

The city planning agency should be consulted throughout. Other plans, particularly for public buildings, may well affect the location and design of a new police station. Police stations should be considered as part of the over-all city plan.

Site Location. In picking a site for a police station several factors should receive careful attention.

1. Economy in police travel time can be gained by placing the station in the high crime area. This is particularly true for the medium-sized city. This is one consideration for not having the station in city hall which is usually located in the downtown area.
2. Cost of land naturally is important. High-cost frontage should be avoided when at all possible. The cost of site development must be considered also. An inexpensive lot might well be the most expensive if extensive preparation, such as grading, is needed.
3. The site should be large enough to allow expansion. Generally it is cheaper to acquire the land needed for immediate and future needs initially than to purchase it later.
4. It has become a truism that all public buildings need off-street parking areas. However, the police station might need area not only for employees' private cars, official vehicles, and visitors, but also area to store impounded vehicles.
5. Thought also should be given to what other facilities the city has that might be used by the police department. If a city has a municipal repair garage, there is no need for such a facility at the police station. If the station can be located near or in the city hall, council chambers can be used as a court room. Consideration might be given to using a city storage yard for impounded vehicles. All these factors influence the size of the site needed. In the small community serious thought should be given to locating the police station in the city hall.
6. Two special site factors should be considered when the station will be combined with another operation, such as a city hall or a fire station. The police station should have a separate entrance to avoid bringing prisoners through the other facility. The jail section of the police department should be above ground for proper light and ventilation.

Physical Facilities. The extent of facilities will depend largely on the size of the community and the size of the department. The Bureau of Governmental Research and Services, University of Washington, in its report, *Police Stations - Planning and Specifications*, discusses requirements for police stations in communities of 3,500 to 150,000 population and gives sample floor plans for each population group. The publication would be helpful to anyone planning a police station.

In planning police station facilities several basic needs should be considered by all cities.

1. Cell Block. Jail cells should be away from public areas. Prisoner retention for any period requires toilets, kitchen facilities, and for separation of men and women prisoners. Because of the expense of cell blocks, the possibility of using county jail facilities should be investigated. Many communities contract with the county for prisoner care. This may be impractical for very large cities, but cities up to 100,000 certainly can effectively use this method of reducing the police station cost. If county facilities are used, it is then necessary only to provide a retention room or rooms with toilet facilities. Such rooms do not need to be regular cells.

2. Communications Center. The communications center should be isolated from the general public and other work areas. However, in smaller communities where it is necessary for

communication personnel to act as receptionists this is not possible. In such a case the communications section might be located in a glass enclosure with a sliding panel.

3. Fingerprinting, Photographic, Identification, and Booking Areas. These areas should be located together, although not necessarily in the same room. Where possible a separate prisoner entrance leading directly into the area for booking should be provided. The essential element is to provide a continuous process of booking, fingerprinting, photographing, and identifying of prisoners in the same area of the building. Where possible, it is desirable to have the area near the jail or retention area.

4. Storage. Provide plenty of space for storage. Firearms and other equipment should be stored in locked cabinets. Room for confiscated, lost, and abandoned articles is necessary if such items are to be properly kept.

5. Squad Rooms. When patrolmen change shifts on beats it is not necessary to have a large assembly room, but it is desirable to provide space for officers to fill out reports. In large departments the detective force will need a separate room with "line-up" facilities.

6. Visitation and Interrogation Rooms. In the very large departments separate rooms for interrogating prisoners are necessary. In the medium-sized department, the detective squad room could be used for interrogation. A separate room for the use of prisoners and their attorneys or visitors is important when the station has facilities for housing of prisoners. In the small department it might be possible to combine all three facilities in one room.

7. Court Room. It has been mentioned that the council chamber and court room can be combined. A separate room should be provided in the station if it is located away from city hall, or if the council chambers are used for other purposes. Communities that contract with the county for prisoner care might be able to arrange for the use of a room in the county jail. This saves the transporting of prisoners from jail to the court.

8. Juvenile Squad. Some authorities believe that offices for juvenile officers should not be located in the police station. It is felt that juvenile offenders should not be brought in contact with the regular police station environment. Where this is not considered feasible, separate quarters should be provided away from the regular booking and interrogation rooms.

9. Other Facilities. Departments responsible for parking meter maintenance might need space in the station for repair work. Another facility to consider is vehicle storage and repairs when a central garage is not available. When financially feasible, it is desirable to have separate facilities for sobering up drunks. This can be a small room, constructed of washable materials, with a toilet.

Regulation of Gravel Pits

Question: How are cities controlling the location and the operation of gravel pits?

Gravel and similar natural resources are not necessarily located in areas that are suited for extracting and processing operations. Cities are thus faced with the necessity of adopting regulations that permit the mining of gravel and stone where the natural resource is located.

Regulations on the operation of gravel pits are contained in separate control ordinances or in the zoning ordinance. In the earlier years of zoning, courts did not look with favor upon zoning restrictions relating to gravel pit operations. Decisions seemed to indicate that zoning could not be used to deprive the owner of land from removing natural resources from his land for sale. Recent decisions have upheld zoning restrictions, and thus many modern ordinances contain provisions on gravel pits and similar operations. Whether regulations are in the zoning ordinance or a separate ordinance, certain basic provisions should be considered: (1) definitions, (2) location control and permit requirements, and (3) operating standards for land rehabilitation, setback, noise, dust, appearance, and safety.

Definitions. Zoning ordinances or separate ordinances frequently have a broad definition which includes not only sand and gravel operations but mining and quarrying. The ordinance of

Corpus Christi, Texas, regulating excavations over 1 foot in depth states: "The word 'excavation' shall include both the singular and the plural; and shall mean and include any act by which soil, earth, clay, sand, gravel, rock, loam, caliche, dirt, hemps, or any other similar matter is dug, cut into, carried, uncovered, removed, displaced, relocated, or bulldozed over one foot in depth in the earth."

Location. Generally, but not always, the location of a gravel pit operation is regulated in the zoning ordinance. Frequently the operation is permitted in any zone subject to a special use permit. Several illustrations will highlight such provisions.

1. The Stamford, Connecticut zoning ordinance states: "Excavations and removal of excavated materials shall be permitted in any zone subject to the provisions of this section where they are merely incidental to the improvement of property. No excavation of more than 100 cubic yards of material shall be commenced or continued without a permit therefore from the zoning officer, except in connection with work for which a building permit has been issued...."

2. Mount Lebanon Township, Pennsylvania, provides that "major excavating, or grading operation and the like" is a conditional use in any district. Conditional uses are subject to a permit granted by the board of township commissioners.

3. Fremont, California, has a similar provision except that certain exceptions are listed. The exceptions are: (1) excavation for which a building permit has been issued, (2) grading of land where no bank is left standing more than 10 feet in vertical height or where less than 1,000 cubic yards of earth are removed, (3) grading in an approved subdivision, and (4) operating quarries before adoption of the ordinance.

4. Corpus Christi controls the location of gravel pits and similar operations by its separate zoning ordinance. An application must be submitted to the department of public works, which in turn refers it to the zoning and planning commission for review and recommendation. The public works department is bound by the commission's action. The Corpus Christi ordinance contains a provision which guides the commission in granting a permit. Under a section relating to the zoning and planning commission's powers of reviewing an application, it is provided that the commission shall be guided by the general purpose of planning, the prohibiting of a nuisance, health hazards, or endangering of lives and property. The ordinance lists six guidelines for the commission to follow: (1) erosion, (2) drainage, (3) lateral supports of the excavation, (4) safety measures to be taken, (5) land values and uses in the area, and (6) other "... factors which may relate to the coordinated, adjusted, and harmonious physical development of the city."

Operation and Rehabilitation. Cities should establish standards and conditions under which a permit will be issued. Standards are found which are either precise or of a general nature. How precise provisions must be is a legal question; courts vary as to the detail necessary to make standards acceptable. In either case it is desirable to cover the topics listed above — land rehabilitation, setback, noise, dust, appearance, and safety.

Provisions as to land rehabilitation state how the excavation is to be done and how the area is to be left. The development of such standards is a technical subject. Provisions usually include regulations as to bank slope, fill, planting, and drainage courses.

Setback provisions regulate how near a street or property line a gravel pit may be located. The New York State Department of Commerce in its guide *Zoning in New York State* recommends that no quarry operation be allowed within 40 feet of any property boundary line or street line.

Noise can be controlled largely by not allowing processing of extracted material at the pit site when located in other than a heavy industrial district. Perhaps a better way would be to establish performance standards based on a measurement of decibels. Information on noise standards can be obtained from the Acoustical Society of America (57 East 55th Street, New York 22).

Standards for dust are difficult to develop. Much can be done, however, by provisions requiring access roads to be of a dustless surface and by requiring operations to be conducted so that dust is reduced by sprinkling or other acceptable means.

Appearance standards can provide that buildings and other structures shall not be allowed to become dilapidated and that weeds shall be kept cut. A provision to consider is to require that

after the operation terminates for a specified period (not over 1 year) all buildings and equipment shall be removed.

Safety provisions require barricades and fences when located in residential areas or when necessary for public safety. The New York report referred to above recommends a fence for any open excavation, located at all points 40 feet or more from the edge of the excavation. All fences should have suitable gates.

Other Provisions. Regulations covering gravel pit operations should provide for clauses to assist in enforcing the standards. These are (1) expiration of a permit within a specified time period unless renewed; (2) provision for submission of plans and specifications; (3) provision for inspection and the payment for inspection; (4) liability insurance, and (5) a performance bond to guarantee rehabilitation.

Examples of Zoning Ordinance Provisions. Requirements in ordinances are sometimes in general terms and sometimes specific. Two examples will serve to illustrate these two different approaches.

Fremont, California, after providing for a use permit, inspection, and cost of inspection states:

Permitted Conditions for Permits for Quarries. The conditions under which a conditional use permit for excavation from or depositing on the earth of said materials may be issued, may include but are not limited to any requirements deemed necessary to protect the public health, safety, comfort, convenience or general welfare including insurance against liability arising from production or activities or operations incident thereto; completion of the work and cleaning up and planting in accordance with approved plans; designation of area in which work may be done; designation of the slope to which excavation may be made for the grading of filling; provisions for controlling dust; hours during which operations may proceed; precautions which must be taken to guide safe traffic movements in and around and by said operation; enclosure by fences of exterior; boundaries of property to be used; posting of a good and sufficient bond to ensure compliance with the conditional use permit and any other conditions deemed necessary by the commission. The commission may include any conditions recommended by the city engineer which are necessitated by or based upon standard engineering practices.

The Stamford, Connecticut, ordinance provides an example of specific regulations. After requiring a permit (see section on location), submission of plans, and inspections and inspection fees, it provides:

In approving plans and specifications for excavations the zoning enforcement officer shall be guided by the following standards:

1. Finished slopes of an excavation shall not exceed 1:1-1/2 (vertical to horizontal) in undisturbed earth, 1:2 in earth fill, and 4:1 in rock, whether or not the ground surface will be below water.
2. If the proposed method of soil erosion control is by revegetation, the specifications for the work shall provide that any layer of topsoil over the area to be excavated shall be set aside and retained on the premises in sufficient quantity to be respread over all surfaces which will remain exposed, except rock, to a depth of at least 4 inches, with topsoil added if necessary to make up any deficiency. The specifications shall also provide that at the completion of respraying of topsoil it shall be immediately harrowed or raked to establish a seed bed and shall be seeded with grass, permanent pasture mixture, or other approved fast-growing revegetation, repeated as necessary until the area is stabilized.
3. No excavation shall be permitted within 20 feet of an existing or approved street except to conform to approximate street grade, nor shall any excavation be permitted within 20 feet of any property line except to conform to approximate grade of adjacent property.
4. Excavation shall not interfere with public utility systems and shall not create or aggravate any condition detrimental to the public health and safety. Any lakes or ponds that are created shall have sufficient depth and inflow of water to prevent their becoming stagnant or marshy in dry periods.
5. Truck access to the excavation shall be arranged as to minimize danger to traffic and nuisance to surrounding properties.

Conditions

1. There shall be no processing of excavated materials on the premises except with a simple bar-type screen to remove oversize aggregates and used only for loading of trucks.

2. Barricades shall be erected as necessary to protect pedestrians and vehicles during the period of excavation.
3. Measures shall be taken to minimize the nuisance of flying dust by use of chemical dust deterrents or other.
4. Provision shall be made for proper drainage of the area both during the period of excavation and at its completion. Permits shall expire by limitation one year from the date of issuance, unless extended by the zoning enforcement officer for good cause shown.

Tree Regulations in Subdivision Ordinances

Question: We would appreciate having information concerning municipal regulations on tree planting in new subdivisions.

Developing regulations for trees in residential subdivisions has four major aspects: (1) preservation of existing trees before development begins, (2) requiring trees to be planted on individual lots, (3) policy in regard to street trees, and (4) standards for trees to be planted.

Preservation of Existing Trees. Recent subdivision ordinances have attempted to save natural growth by establishing certain requirements that the subdivider must meet in developing land. Provisions usually state that the developer will take due regard for all natural assets. Lebanon, Tennessee's subdivision ordinance reads: In all subdivisions due regard shall be shown for all natural features such as large trees, water courses, historical spots and similar community assets which, if preserved, will add attractiveness and value to the property."

This type of provision, although recognizing the value of trees, is difficult to enforce. It leaves great deal of room for interpretation and misunderstanding. Some communities therefore are establishing more specific requirements. The town (township) of North Castle, New York, has this provision:

The planning board of the town of North Castle is empowered to require that trees will be left standing in place upon the subdivision, and no live tree, exceeding three inches in diameter may be cut down in such areas without expressed consent of the Planning Board to be indicated upon the approved plan. The Planning Board may require that trees shall not be cut down on or removed from any building plot on the subdivision unless the area is to be occupied by a building thereon. In such instance trees may be cut down in an area to be occupied by buildings or driveways and within a distance of ten feet around the perimeter of such buildings or driveways.

Requiring Trees on Individual Lots. MIS has not seen a subdivision ordinance which requires a developer to plant a tree on individual lots within a subdivision. Probably the reason that this step has not been taken by municipalities is that there is a legal question of whether such a requirement could be upheld by the courts. It would be difficult to prove that the planting of a tree on individual lots has any relationship to the public safety, health, or welfare.

Municipal officials should know, however, that the Federal Housing Administration does require trees to be planted in new subdivisions. The FHA minimum property standards prior to July 1, 1959, required that a tree be planted on each lot, preferably in the southwest corner, and that a tree be planted in the public right-of-way. After July 1, 1959, FHA standards were reduced to require only one tree, either planted in the public right-of-way or on the lot. Probably one of the reasons for reducing the requirement is that some cities place utility lines in the area between the curb and sidewalk and do not wish trees to be planted.

Some FHA regional offices are enforcing the old standards where possible. FHA standards are minimum, and each FHA office may apply more stringent requirements depending on a number of circumstances. The New York regional FHA office, in 1952, published standards for that region on street tree planting. Standards were quite detailed, requiring such things as, "trees shall be of necessary stock grown under the same climatic conditions as at the location of the development," "shall be of symmetrical growth, free of insect pests and disease, suitable for street use and capable under the maintenance contemplated and the average trunk diameter measured at a height six inches above the flushed ground level shall be a minimum of three inches." These standards required trees approximately 40 or 50 feet apart and set standards for planting.

Public Right-of-Way. Municipalities can recommend, establish standards for, or require street shade trees to be planted in the public right-of-way for new subdivisions. Some subdivision ordinances only state that if the developer plants such trees, they shall be in conformity with the tree program of the city.

The subdivision ordinance of Little Rock, Arkansas, is an example of a subdivision ordinance recommending street trees. Under the heading, "Recommended Improvements," the ordinance states: "Street trees that may be planted shall be placed so as not to obstruct sight distances."

A number of municipalities require that street trees be planted. The wording of the Lower Merion Township, Pennsylvania, ordinance is typical: "Shade trees shall be provided by the subdivider and planted along the right-of-way lines of streets. Every effort shall be made to locate trees so far as not to interfere with the installation and maintenance of sidewalks and utilities. Species and planting interval will be determined on the basis of topography, available area, and location of existing trees, and shall be subject to the approval of the Shade Tree Commission of the Township."

Municipalities should do all they can to encourage the planting of trees. Trees do enrich home sites and subdivisions besides enhancing property values. One only has to compare the all too typical flat, barren new subdivision to the subdivision that has been built by saving existing trees and planting new ones.

Standards. Standards for tree requirements in new subdivisions should be the same as the over-all city policy on street trees. Development of a coordinated street tree program is a problem in itself. For MIS subscribing cities who are interested in standards, information is available on loan. Particularly recommended is MIS Report No. 125, *Administration of a Municipal Street Tree Program*; an article by William B. Love (a specialist in municipal forestry and parks at Michigan State University) entitled "Street Tree Planting and Maintenance Standards and Policies"; and an article entitled, "Ninety Trees for Changing Street and Home Plans."

Eliminating the Bird Nuisance

Question: Could you please provide us with some information regarding what must be a universal perplexing problem; what can be done about the starling and pigeon nuisance?

The problem of eliminating pigeons and starlings is universal; it is faced by municipalities around the world in varying degrees. Birds cannot only disfigure buildings and create filty, but certain birds, such as the pigeon, are a distinct health problem. There are recorded deaths of people who have contracted diseases by handling birds.

MIS knows of 13 methods that have been used with varying success in eliminating starlings and pigeons. As one article states: "Municipalities have gassed, intoxicated, electrocuted, scared, shoed, blown, flushed, shot and screened these pesky birds, but apparently no one as yet has found a really effective way to give these birds the bird. Do you have a suggestion?"⁵ The methods that have been used by municipalities are as follows:

1. Pigeon Traps. The oldest method used to eliminate objectional birds is the trap. Some communities have been successful, while others have not. It has been reported that in 1936 the National Soldiers Home in Washington, D. C., was successful in capturing more than 1,000 starlings in a period of two and one-half months. The starlings were marked by a means of a band and released. They did not return to the area. On the other hand, one midwestern city reported that trapped pigeons were released over 50 miles from the city, but returned within a short time.

Pigeon traps are baited with shell corn, water, and a female pigeon. Table scraps, overripe fruit, stale bread, and almost any kind of inoffensive garbage will serve as bait for starlings. Traps should be placed in a locality well populated by the birds.

2. Starling Distress Call. Two zoologists made an hour-long tape recording of a scared starling. The recording was amplified to 120 decibels. The idea is that the starling will respond

⁵"Giving the Birds the Bird," *The Municipality*, July, 1955, pp. 143, 151.

"distress call." The tape is played in areas where the birds are massed with the objective of dispersing them. Cincinnati attempted this method and played such a recording in the downtown for two and one-half hours with only limited success.

3. Gin-Spiked Mesh. A unique method is to spike mesh and food with gin and place it near the roosting places. It has been reported that the birds become so intoxicated that they fall from their resting places and can be easily picked up and either killed or removed to rural areas.

4. Fake Owls and Snakes. Fake owls and snakes are placed on ledges of buildings and other roosting places. The fake owls are soon detected by the pigeon and become favorite roosting places, thus perhaps only increasing the problem. Fake snakes have had a temporary effect, but the birds soon realize that the snakes are harmless.

5. Chemicals. "Roost No More" is a chemical which can be applied to ledges, roof tops, eaves, and other potential roosting spots. The chemical is completely odorless to humans but highly not to the birds. It is reported that the birds find the odor intolerable. The chemical has a compound which stings a bird coming in contact with it, but it is harmless to humans. Once stung by the chemical the birds never return to their roosting place. The chemical is approved by animal control societies throughout the country. A number of cities have reported success in the use of this chemical including Dayton, Ohio; Newark, New Jersey; and the public schools in Columbus, Ohio.

Another chemical is "Bur-Co," a sticky-type substance. It does not harm birds or humans. Birds find it extremely unpleasant. There is no chemical reaction on any type of building material.

6. The Hot Foot Approach. The chemical of "Roost No More" has the effect of giving a hot foot, but some municipalities have developed electrical shock devices which accomplish the same result. Albany, New York, installed three parallel wires along flat surfaces where birds roost, and every three seconds an electrical impulse was sent through the wires. The impulse was not strong enough to kill the birds but to make them uncomfortable, causing them to move on.

One company specializing in eliminating birds has developed a generator about the size of a washing machine that can be mounted on any wall and adapted to either alternating or direct current. The generator produces a pulsating current of 300 volts and only two-tenths of a milliamp. The current is passed to a generator which steps up the voltage to 450. Positive and negative wires (insulated) are strung two and one-half inches apart on insulators placed near where the birds roost. The device sets up an electrical field in which a mild shock is established.

7. Pigeon Slides. Pigeon slides are pieces of metal placed at angles so that pigeons slip off the roosting area when trying to land. This device might prove effective on large buildings if installed in sufficient quantity.

8. High Pressure Water. High pressure water has been found successful. Firemen in New York City, keepsie, New York, squirted water under high pressure on the birds. After two applications on successive nights the birds did not return. The city forester of Newton, Massachusetts, was able to remove pigeons from the city hall by blowing them off their roosting places. He used a high pressure tree sprayer.

9. Shot-Gun Cure. Cincinnati, after experimenting with a number of methods, finally issued a declaration of Nuisance-Creating Bird. This declaration was issued by the city manager in accordance with local ordinances. It established a crew of expert civilian marksmen organized under the supervision of the police department. The city supplied the marksmen with skeet trap ammunition. Such ammunition causes little damage but will either stun the birds or kill them. The marksmen worked at night in downtown and other congested areas firing from street level at the pigeons. The marksmen were followed by crews of work-house prisoners who removed the birds. The crews repaired any slight damage that occurred. The city did receive some protest, but the majority of people expressed approval.

10. Nixalite. This is a spring-tempered, rust-proof, steel spring with needle sharp points welded and curved in varying angles, 120 sharp points in every foot of nixalite. It has a flexible wire which can be bent around corners or other objects. It is installed flush with building ledges,

church steeples, drain spouts, projecting signs, or any type of surface where pigeons, starlings, and other obnoxious birds are apt to roost. The device is approximately 3 and one-half inches high, 4 and one-half inches wide, and fabricated in 4-foot lengths. The birds are discouraged from nesting because of the sharp points.

11. The Sleeping Pigeon. Burbank, California, has been experimenting with an anesthetic compound mixed with grain and alcohol which puts pigeons to sleep. When a complaint is received that pigeons have become a nuisance in a particular area, personnel of the animal shelter investigate. Finding a complaint justifiable, city crews spread plain grain in the area for several days at the same time. When the pigeons have become used to the food, grain mixed with the anesthetic compound is placed in the area. In 10 to 15 minutes birds begin to fall asleep and remain so for one to three hours. Scrub pigeons are destroyed; other birds are fed and watered till they have recovered and then are released. For detailed information contact MIS or the city of Burbank.

12. A Slippery Varnish. The world-wide nature of the bird problem is illustrated by a method of eliminating pigeons developed by the Ministry of Works, London, England. Scientists developed a colorless super varnish that is sprayed on roosting places. The varnish dries to an unbelievable slickness. The pigeon alights and finds himself skidding on the sprayed surface.

13. Poison. Hamburg, Germany, also fights the pigeon. Each morning at five o'clock kernels of white corn impregnated with strychnine are sprinkled on the pavement of the main square and the dead pigeons are hauled away before the traffic appears. American cities probably have not used this device because of humane society objections.

Perhaps other successful means of eliminating birds have been developed. It seems, however, that in the final analysis it is a continuing problem. Whatever method is used, it must be repeated. The Cincinnati ordinances, referred to above, recognize this by providing a section which states: "Whenever it shall appear on the complaint of residents or otherwise that starlings, sparrows, pigeons, rodents, or other birds constitute a nuisance in any part of the city, the city manager shall be authorized to use all necessary means to destroy such nuisance-creating birds and animals."

Regulation for Heliports

Question: The city council has received a request to permit the establishment of a heliport in the city. What factors should be considered in evaluating the request and any future requests?

In establishing standards for heliports, the first job is to define what is meant by a heliport. The definition should be sufficiently broad to cover ground-level landing areas, rough-top landing decks, commercial operations, and private operations. One report defines a heliport as "an area of land or water or a structural surface which is used, or intended for use for the landing and take-off of helicopters, and any appurtenant areas which are used or intended for use for heliport buildings and other facilities."

Municipal control is largely concerned with site location and the effect of such an operation on the surrounding areas. Safety measures as to flight patterns and structural design are important but are largely controlled by the Federal Aviation Agency. A city should work closely with the FAA in considering any request for a heliport.

Since municipal control is largely in regard to site location, it is directly related to zoning and land use. Some municipalities require a zoning use permit instead of blanket permission in certain districts. In evaluating whether or not such a permit should be granted the following factors should be considered:

1. Type of Operation. If the request is for a commercial operation the location will be affected by transportation facilities and parking. A commercial operation should not be placed where the traffic and parking problem will be increased. When the operation is for private use these factors are not important.

2. Approach Paths. Helicopters do not need the unobstructed approach area that conventional aircraft need. However, because of night operations, the approach areas must be considered. Ideal areas would be near waterways, cemeteries, parks, or other open areas. Further, municipalities

consider protecting the approach to a heliport by height restrictions. One report recommends a clearance slope of about 7 per cent.

3. Safety Measures. The design of a heliport for safety is essential. The Federal Aviation Commission is directly concerned in this area. Before a city approves a heliport it should be sure that the FAA has approved the operation.

4. Insurance. It is wise to require that a heliport operator carry sufficient insurance to protect the city against liability for property damage and injury to persons. If the port is owned by the city, all persons, firms, or corporations, using the facility should be required to carry insurance. As in Christi, Texas, in 1955 enacted a provision which requires users to carry insurance in the amount of \$100,000 for property damage, \$100,000 for personal injury to any one person, and \$100,000 for personal injuries in any one accident.

5. Effect on Surrounding Property. The greatest disadvantage of a heliport is noise. A report published in *Planning for Urban Heliports* states: "The noise caused by helicopter operation within or adjacent to built-up urban areas is and will continue to be an extremely important factor in planning helicopter transportation. . . . Excessive noise could result in heliports being banded from city centers." One approach is to establish acceptable noise levels based on decibels at so many feet. Although no standards have been developed, studies indicate that a noise level not exceeding 75 to 80 decibels at 150 feet would be desirable for daytime operation in residential areas. The problem of noise may eventually be reduced by technical improvements in helicopter design, but for the present time it remains an important consideration.

Note: This report was prepared by William E. Besuden, staff member of the International Managers' Association.

